Fig.1

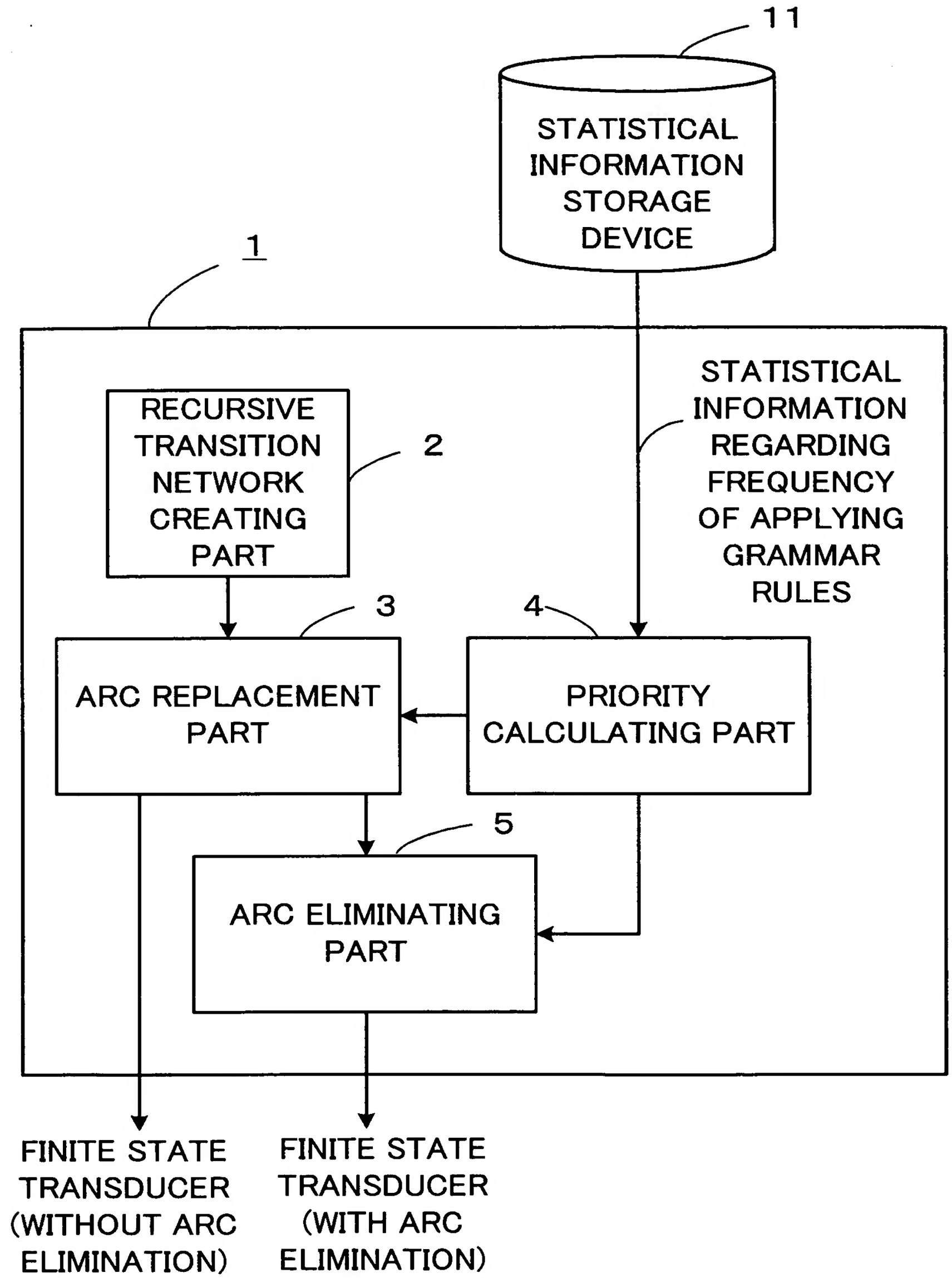

11
STATISTICAL INFORMATION STORAGE DEVICE
1
RECURSIVE TRANSITION NETWORK CREATING PART
2
STATISTICAL INFORMATION REGARDING FREQUENCY OF APPLYING GRAMMAR RULES
3
4
ARC REPLACEMENT PART
PRIORITY CALCULATING PART
5
ARC ELIMINATING PART
FINITE STATE TRANSDUCER (WITHOUT ARC ELIMINATION)
FINITE STATE TRANSDUCER (WITH ARC ELIMINATION)

Fig.2

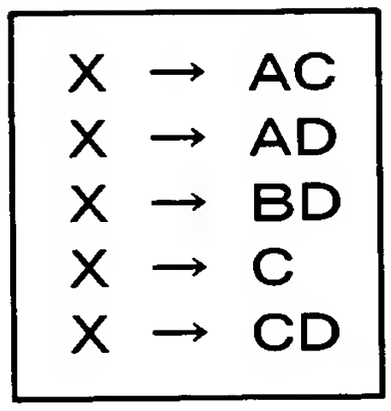


Fig.3

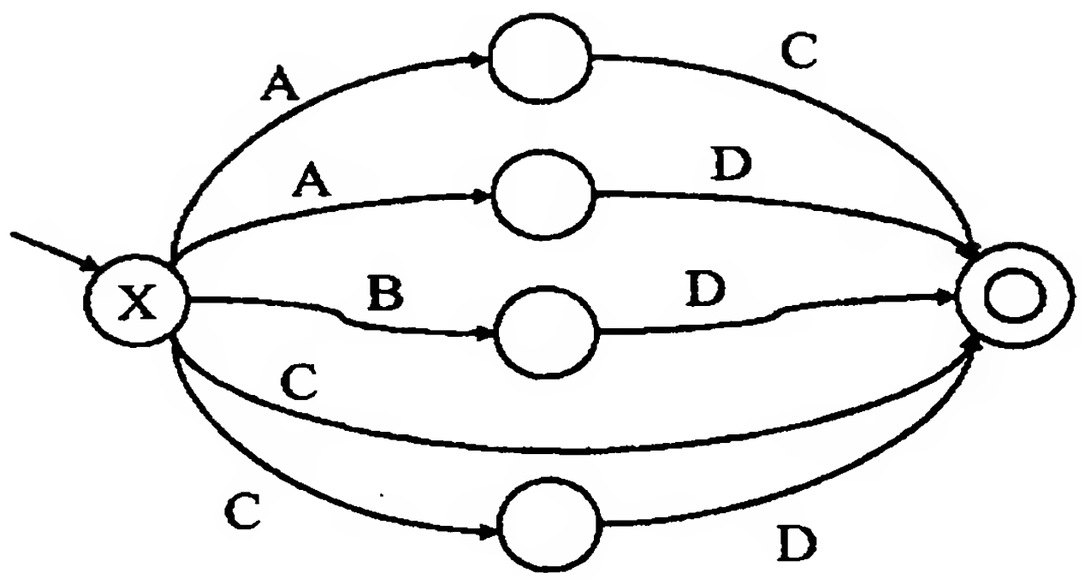


Fig.4

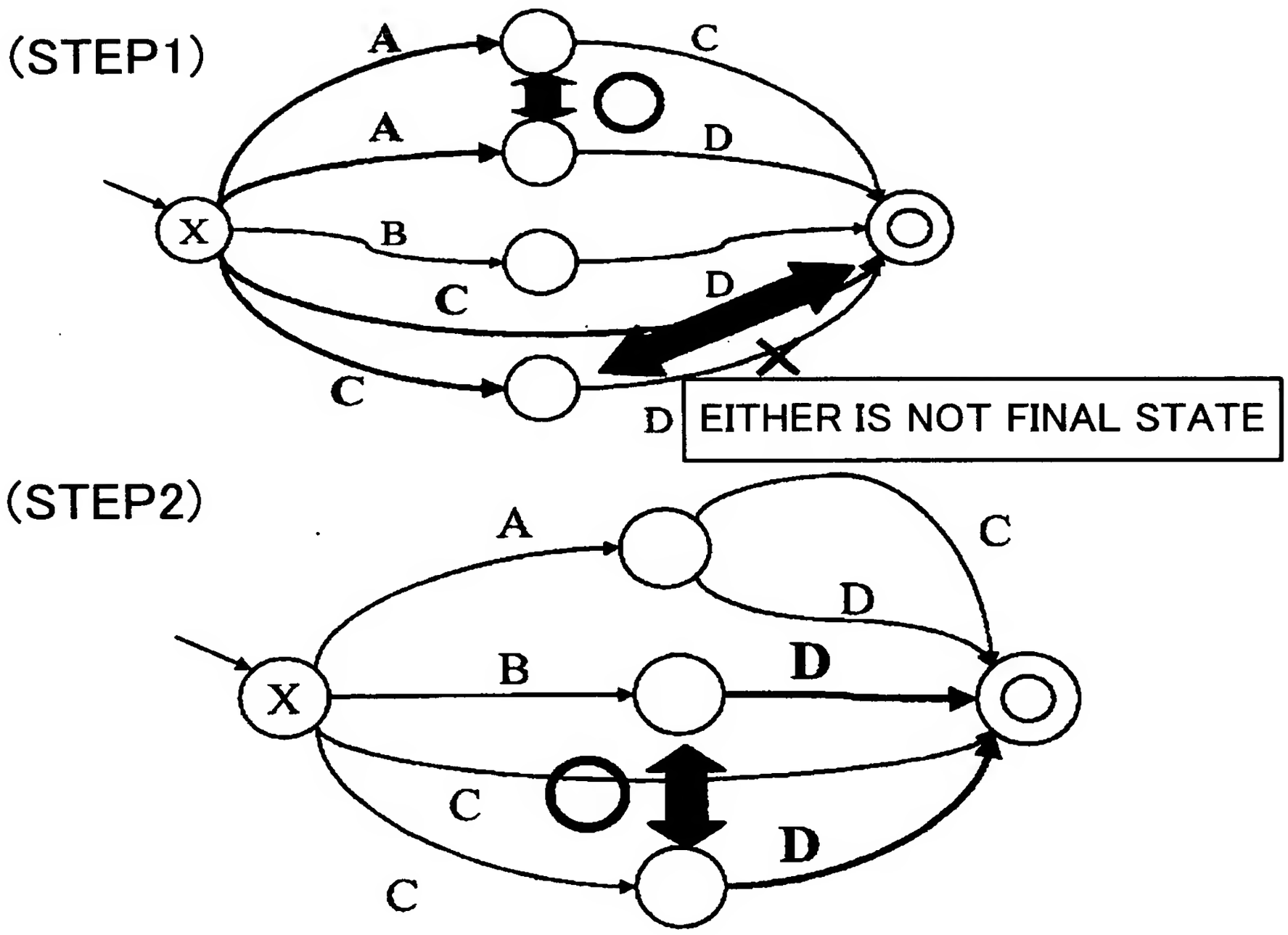

(STEP1)
A
A
C
D
X
B
C
D
C
D
EITHER IS NOT FINAL STATE
(STEP2)
A
C
D
B
D
X
C
D
C

Fig.5

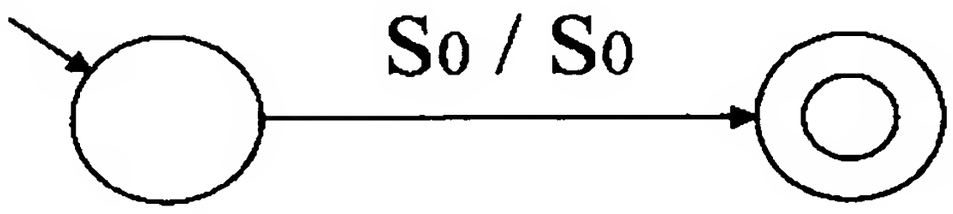

S0 / S0

Fig.6

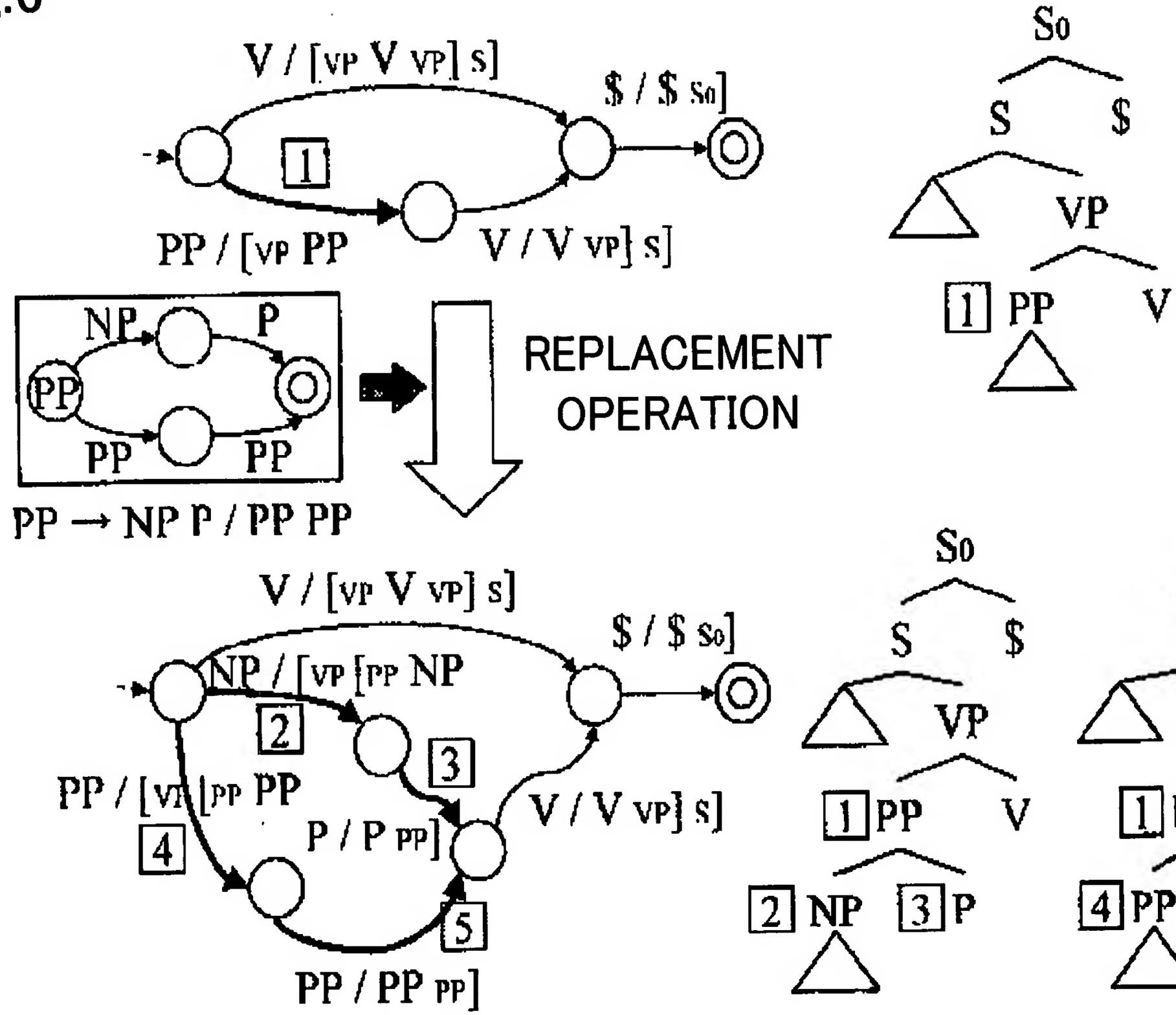

V / [VP V VP] S]
$ / $ S0]
1
PP / [VP PP
V / V VP] S]
NP
P
PP
PP
PP
PP → NP P / PP PP
REPLACEMENT
OPERATION
V / [VP V VP] S]
$ / $ S0]
NP / [VP [PP NP
2
3
PP / [VP [PP PP
4
P / P PP]
V / V VP] S]
5
PP / PP PP]
S0
S
$
VP
1 PP
V
2 NP
3 P
4 PP
5 PP

Fig.7

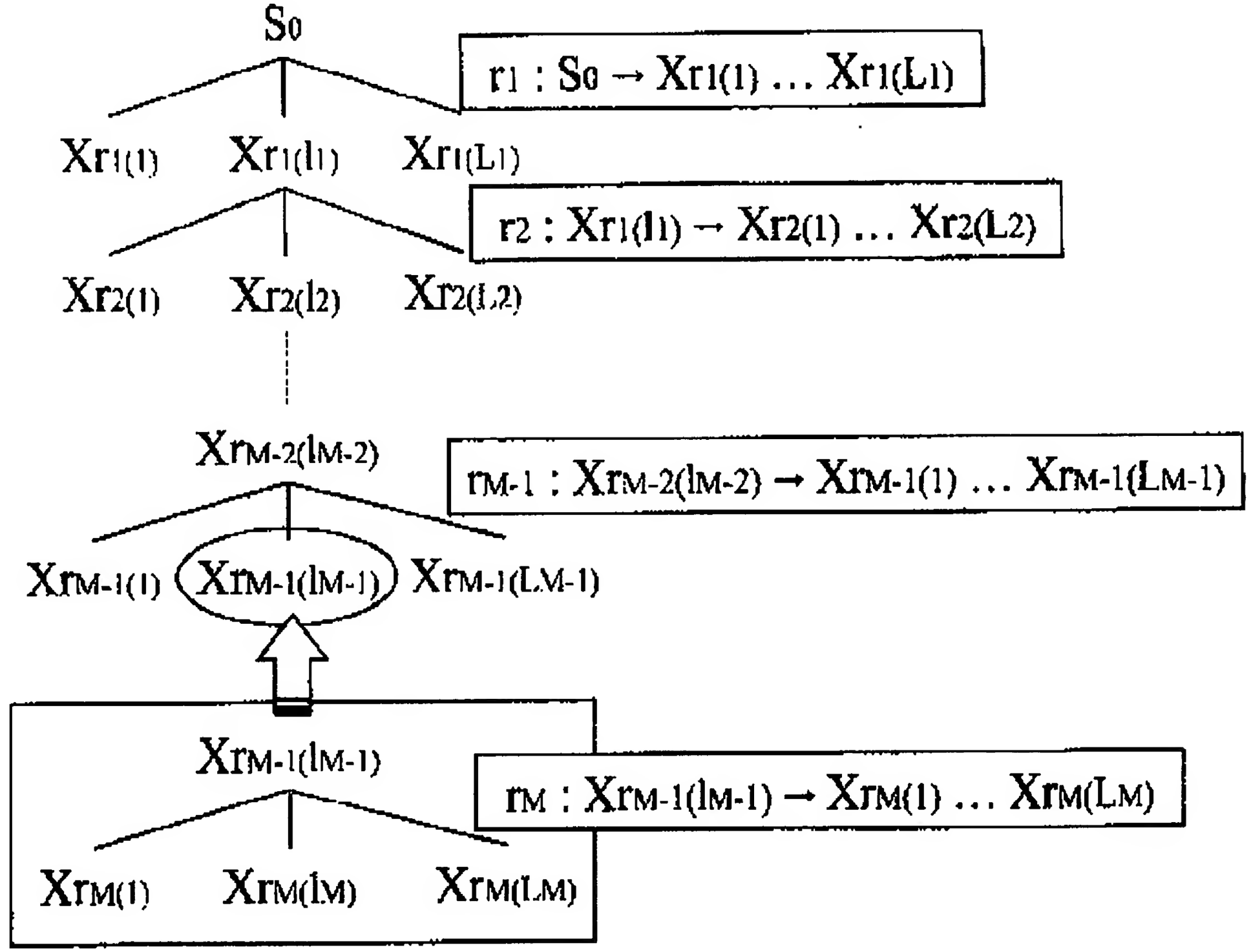

S0
r1 : S0 → Xr1(1) … Xr1(L1)
Xr1(1) Xr1(l1) Xr1(L1)
r2 : Xr1(l1) → Xr2(1) … Xr2(L2)
Xr2(1) Xr2(l2) Xr2(L2)
XrM-2(lM-2)
rM-1 : XrM-2(lM-2) → XrM-1(1) … XrM-1(LM-1)
XrM-1(1) XrM-1(lM-1) XrM-1(LM-1)
XrM-1(lM-1)
rM : XrM-1(lM-1) → XrM(1) … XrM(LM)
XrM(1) XrM(lM) XrM(LM)

Fig.8

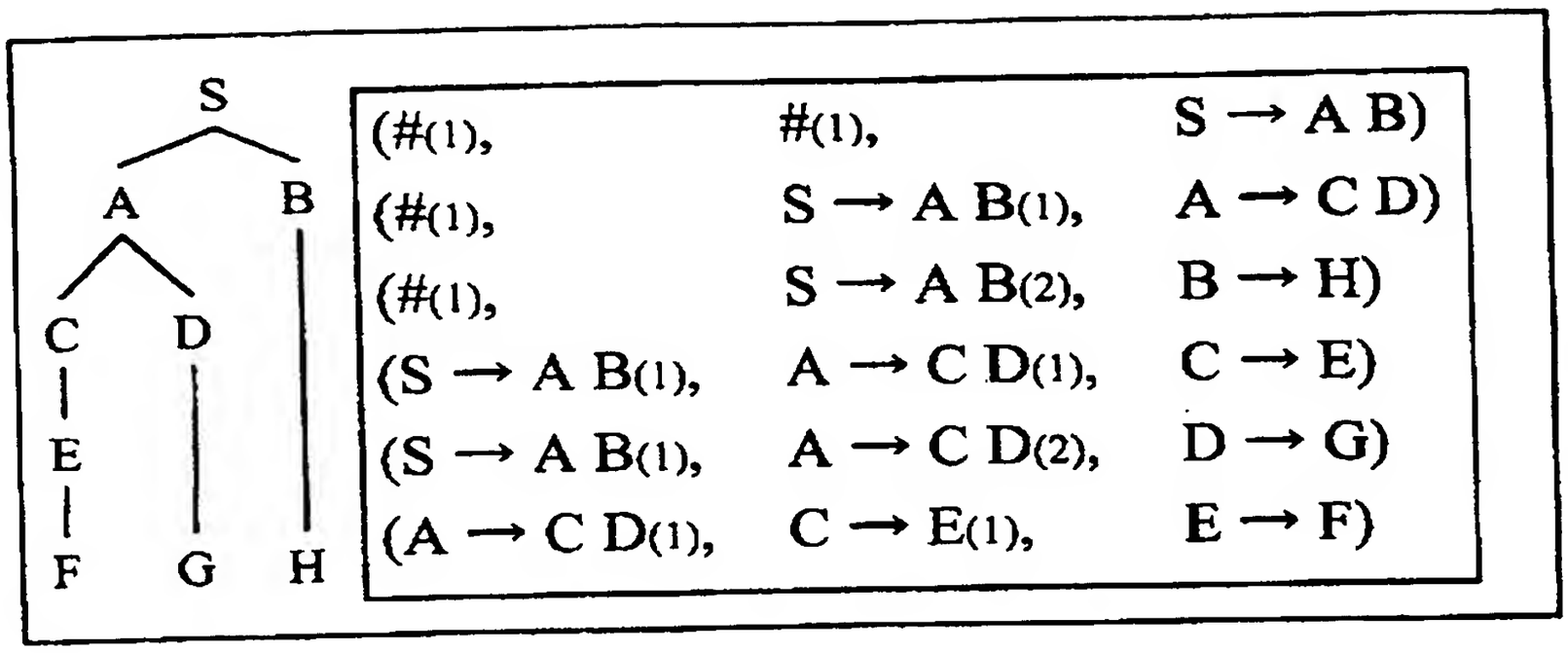

S
A
B
C
D
E
F
G
H
(#(1), #(1), S → A B)
(#(1), S → A B(1), A → C D)
(#(1), S → A B(2), B → H)
(S → A B(1), A → C D(1), C → E)
(S → A B(1), A → C D(2), D → G)
(A → C D(1), C → E(1), E → F)

Fig.9

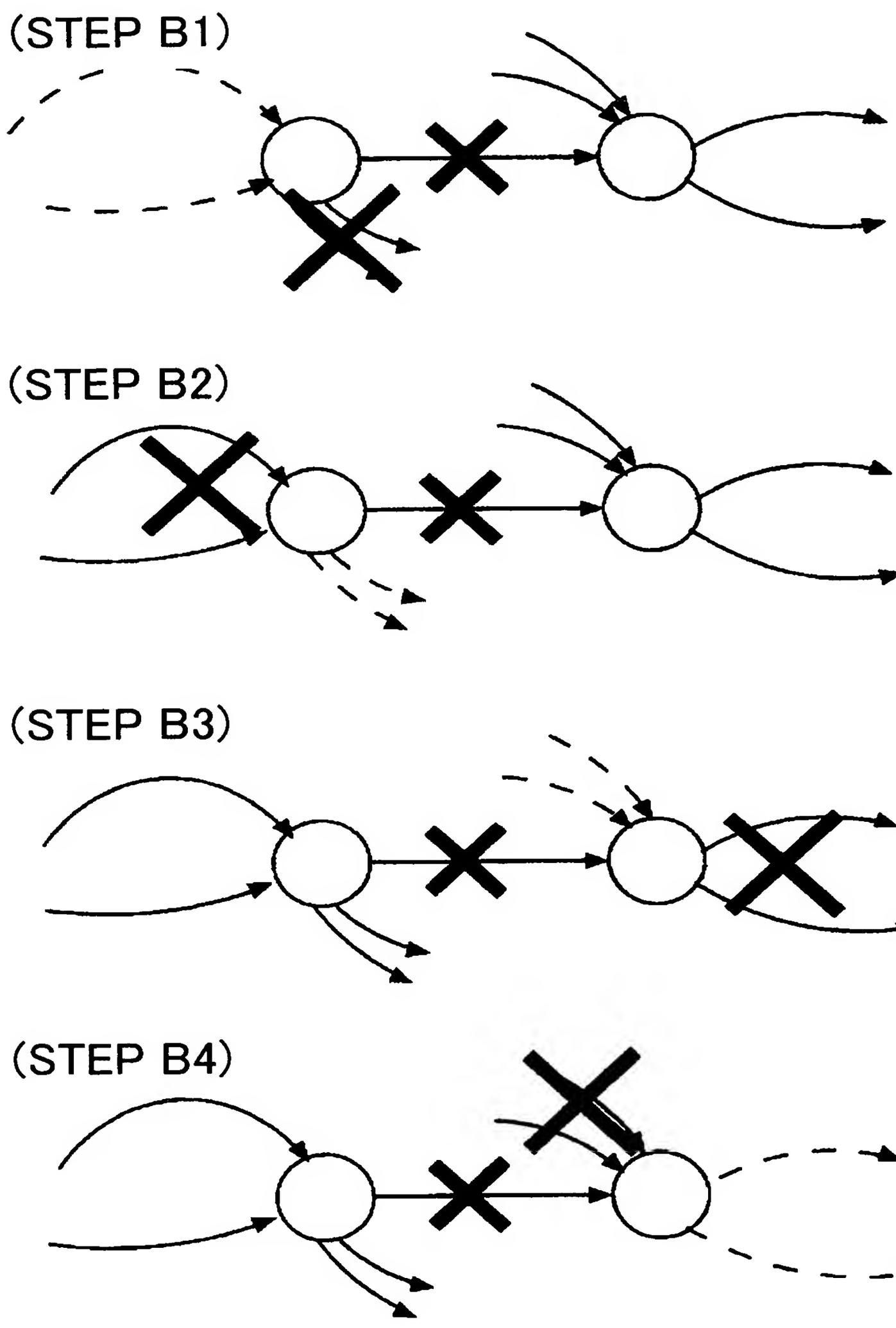


FIG.10

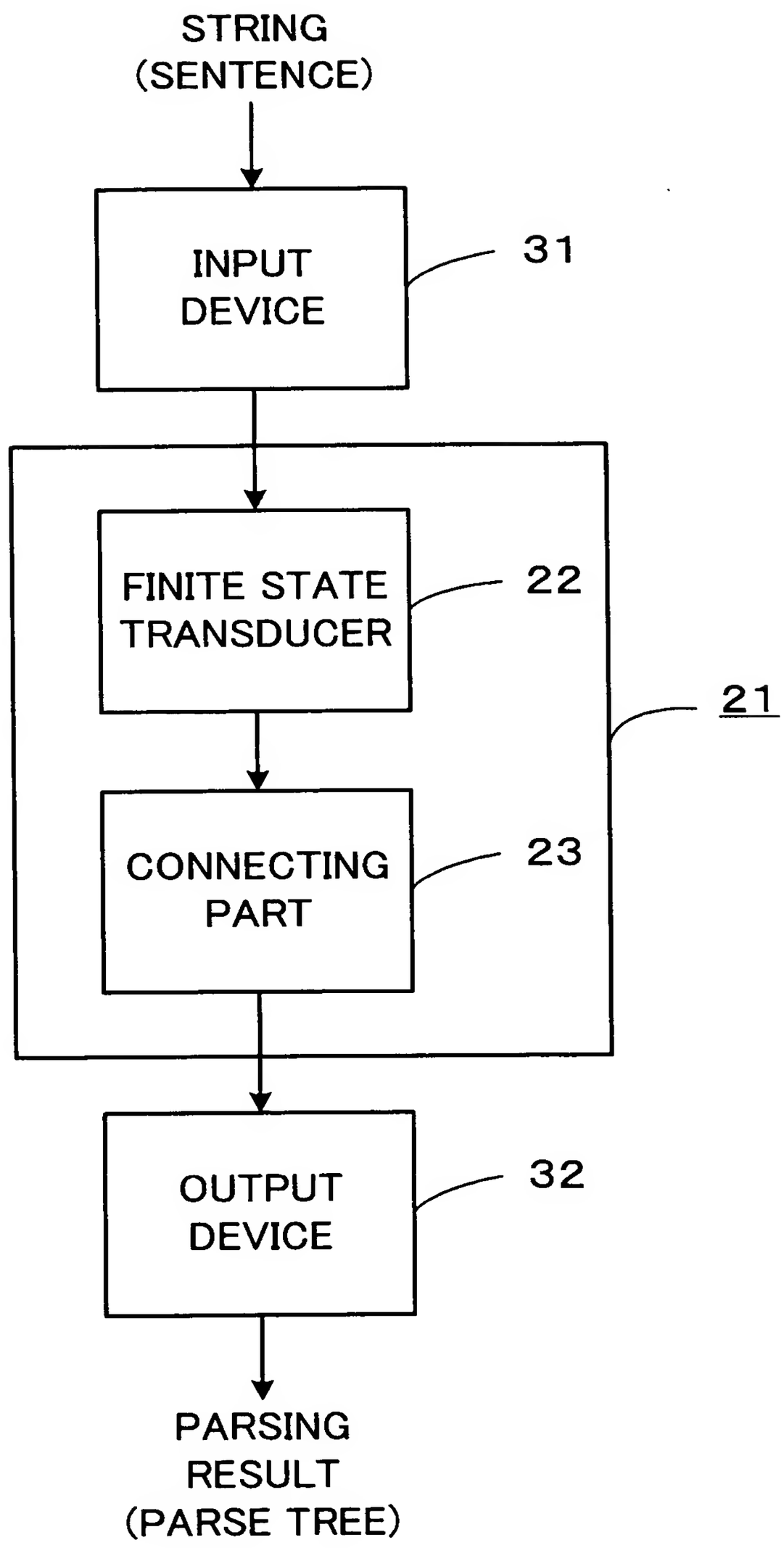
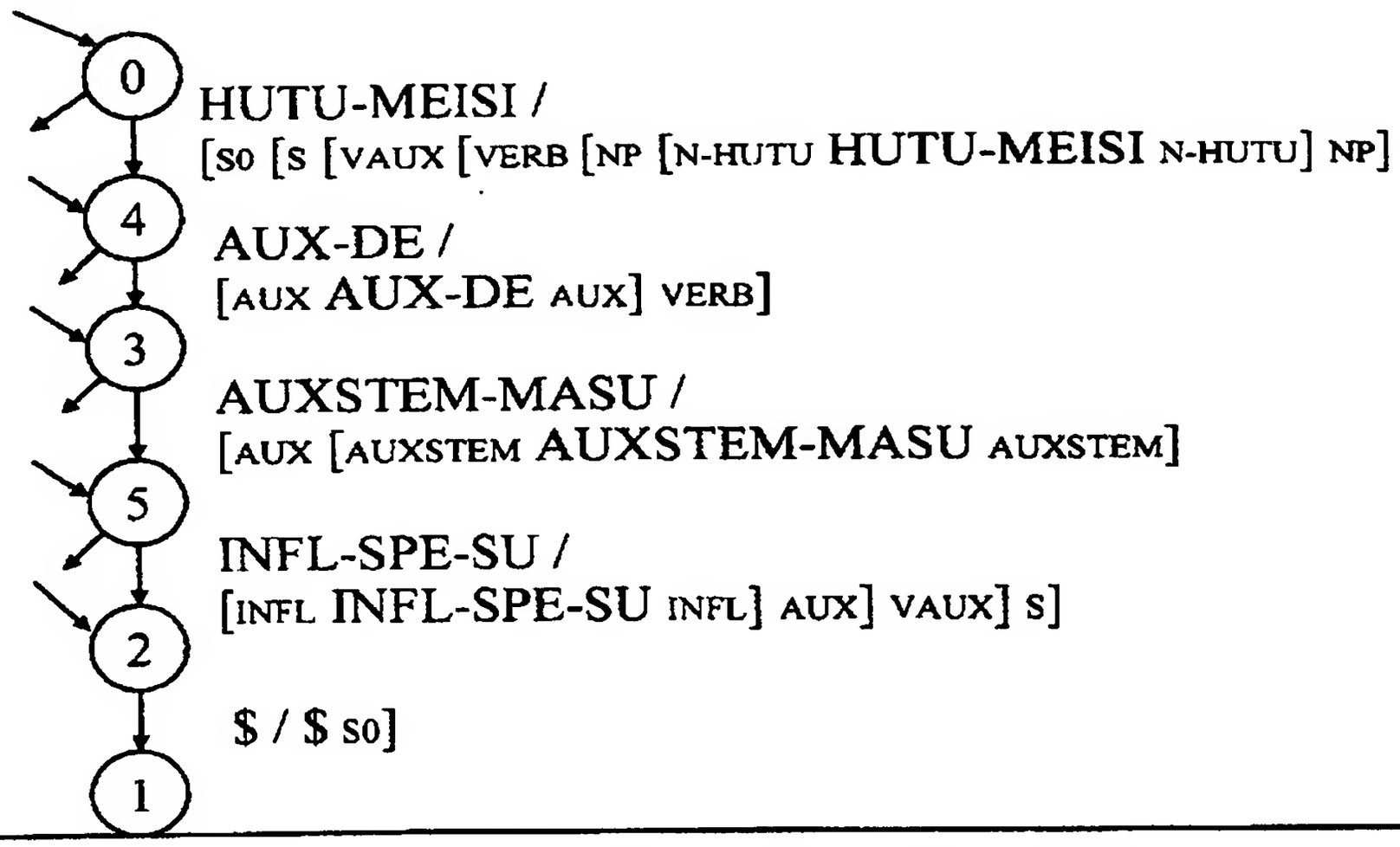

STRING
(SENTENCE)
INPUT
DEVICE
31
FINITE STATE
TRANSDUCER
22
21
CONNECTING
PART
23
OUTPUT
DEVICE
32
PARSING
RESULT
(PARSE TREE)

Fig.11



Input sentence: KANKOUKYOKU(HUTU-MEISI) DE(AUX-DE) GOZAIMA(AUXSTEM-MASU) SU(INFL-SPE-SU).($)

STATE	INPUT	OUTPUT (PARSE TREE)
0		
4	HUTU-MEISI	[S0 [S [VAUX [VERB [NP [N-HUTU HUTU-MEISI N-HUTU] NP]
3	AUX-DE	[S0 [S [VAUX [VERB [NP [N-HUTU HUTU-MEISI N-HUTU] NP] [AUX AUX-DE AUX] VERB]
...	...	...
1	$	[S0 [S [VAUX [VERB [NP [N-HUTU HUTU-MEISI N-HUTU] NP] [AUX AUX-DE AUX] VERB] [AUX [AUXSTEM AUXSTEM-MASU AUXSTEM] [INFL INFL-SPE-SU INFL] AUX] VAUX] S] $ S0]

Fig.12

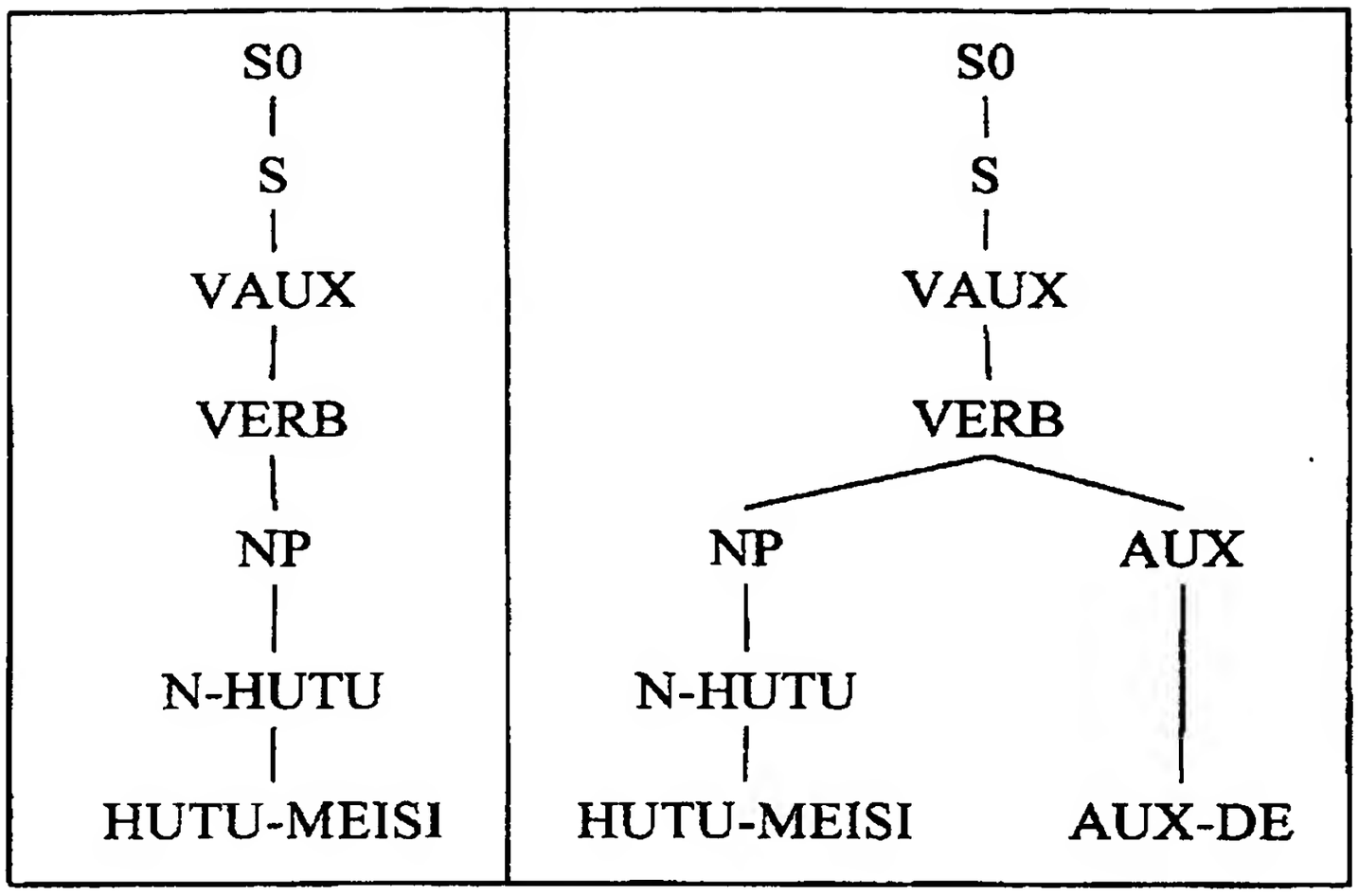
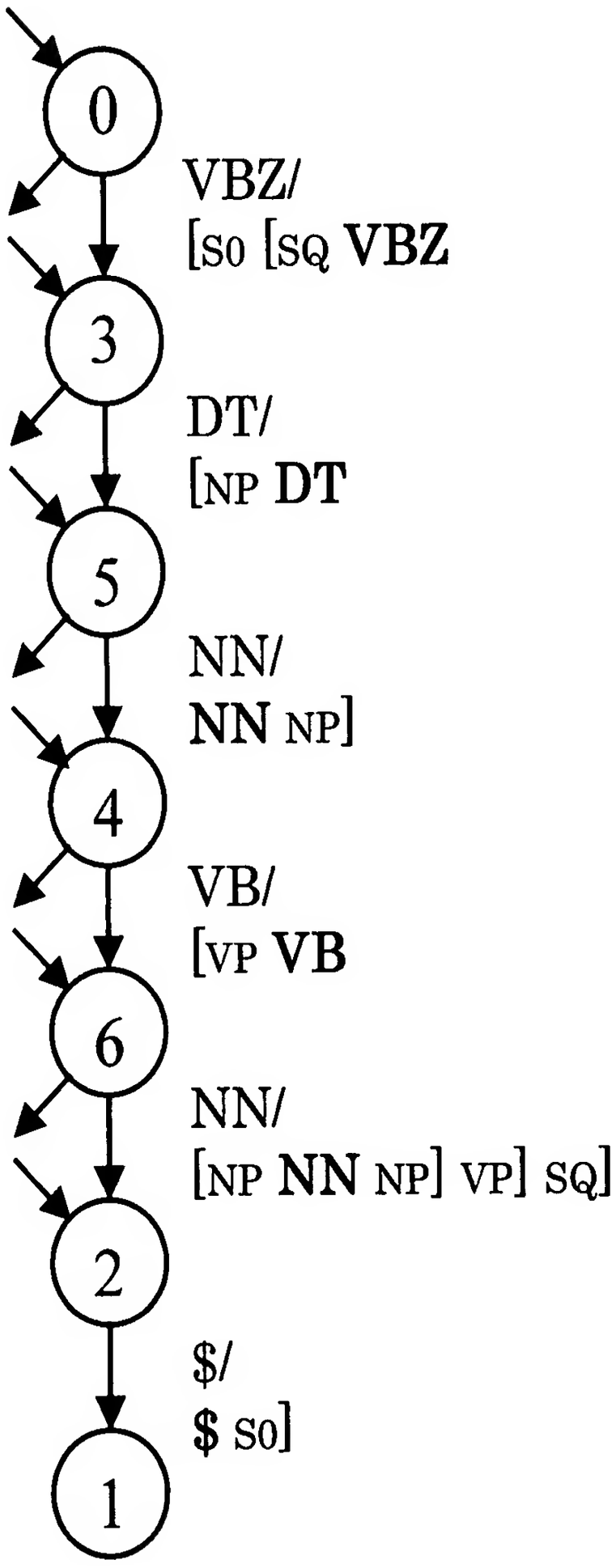

S0
S
VAUX
VERB
NP
N-HUTU
HUTU-MEISI
S0
S
VAUX
VERB
NP
AUX
N-HUTU
HUTU-MEISI
AUX-DE

Fig.13



Input sentence: Does(VBZ) that(DT) flight(NN) serve(VB) dinner(NN)?($)		
STATE	INPUT	OUTPUT (PARSE TREE)
0		
3	VBZ	[S0 [SQ **VBZ**
5	DT	[S0 [SQ **VBZ** [NP **DT**
4	NN	[S0 [SQ **VBZ** [NP **DT NN** NP]
....	....	....
0	$	[S0 [SQ **VBZ** [NP **DT NN** NP] [VP **VB** [NP **NN** NP] VP] SQ] **$** S0]

Fig.14

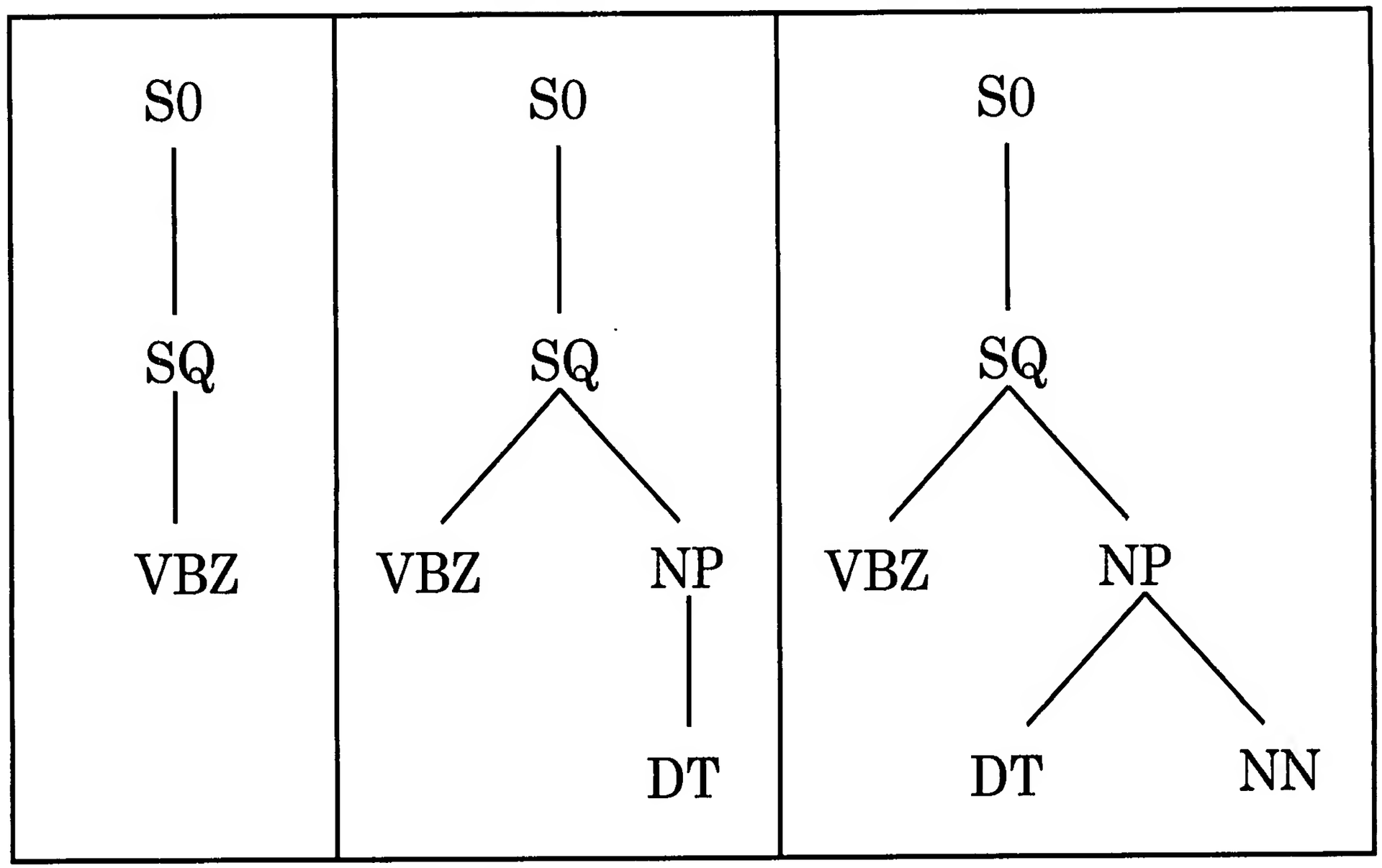
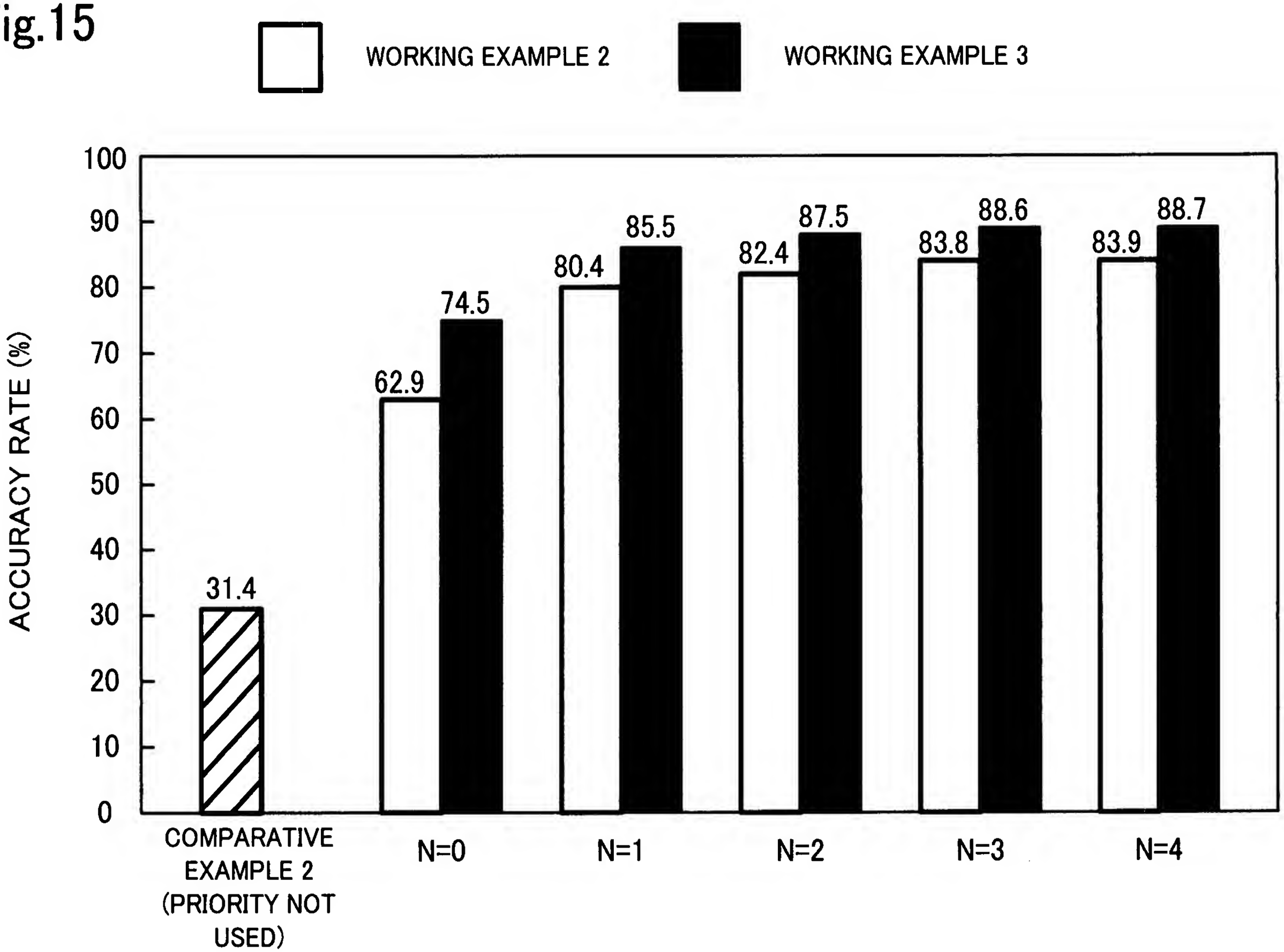


Fig.15


WORKING EXAMPLE 2
WORKING EXAMPLE 3
ACCURACY RATE (%)
100
90
80
70
60
50
40
30
20
10
0
31.4
62.9
74.5
80.4
85.5
82.4
87.5
83.8
88.6
83.9
88.7
COMPARATIVE EXAMPLE 2 (PRIORITY NOT USED)
N=0
N=1
N=2
N=3
N=4